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10/633,057

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Richard F. Taylor

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01/25/2006

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EXAMINER

LEWIS, MONICA

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/633,057

Applicant(s)

TAYLOR, RICHARD F.

Examiner

Monica Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 26-42 is/are pending in the application.
- 4a) Of the above claim(s) 33-35 and 38-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-29, 31, 32, 36 and 37 is/are rejected.
- 7) ☒ Claim(s) 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This office action is in response to the election filed November 1, 2005.

#### ***Response to Arguments***

2. Applicant's arguments with respect to claims 26-32, 36 and 37 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Election/Restrictions***

3. Applicant's election with traverse of Embodiment I in the reply filed on 10/12/05 is acknowledged. The traversal is on the ground(s) that the restriction "the Examiner did not identify the species with respect to the figures or examples set forth in applicant's specification, or set forth any reasoning why applicant's figures and examples are insufficient." This is not found persuasive. Although species may be identified by figure numbers, this is not required. The election did clearly set forth distinct species. Finally, note a proper response to a genus/species restriction is the submission of evidence or the identification of such evidence showing the species to be obvious variants or clearly admit on the record that this is the case.

The requirement is still deemed proper and is therefore made FINAL.

#### ***Specification***

4. The disclosure is objected to because of the following informalities: a) the specification does not provide a Background of the Invention and a Brief Summary of the Invention.

Appropriate correction is required.

### Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.

- (e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
  - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
  - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and

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preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

- (g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (k) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 26-29, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iniewski et al. (U.S. Patent No. 6,104,277).

In regards to claim 26, Iniewski et al. ("Iniewski") discloses the following:

a) a continuous doped region (1) of a second conductivity type formed in the semiconductor material, the doped region having a first region and a spaced-apart second region, different potentials being placed on the first and second regions of the continuous doped region to cause a current to flow between the first region and the second region (For Example: Figure 2) (Note: Although Iniewski does not specifically disclose different potentials, Iniewski discloses that current can be routed through the contacts which are located on different ends of the doped region (For Example: See Column 3 Lines 13-16). This is similar to Applicant's invention. Applicant discloses that "the first and second end regions of doped resistor region 130 are the opposite ends length-wise of doped resistor region...When connected to different potentials, a current flows into one of the contacts, such as contact 140A, and flows out of the other contact, such as contact 140B (For Example: See Page 3 Lines 21, 22 and 29 and Page 4 Lines 1 and 2). Therefore, it would have been obvious that different potentials are applied because current is routed through the contacts.);

b) a layer of insulation (7) that contacts the semiconductor material (3) (For Example: See Figure 1);

c) a first semiconductor structure that contacts the layer of insulation (For Example: See Figure 1);

d) a second semiconductor structure that contacts the layer of insulation, a spacing between the first and second semiconductor structures being substantially equal to a dimension of the doped region (For Example: See Figure 1).

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In regards to claim 27, Iniewski discloses the following:

a) the doped region has a length and a width (For Example: See Figure 1 and Figure 2).

In regards to claim 28, Iniewski discloses the following:

a) the dimension is the width of the doped region (For Example: See Figure 1 and Figure 2).

In regards to claim 29, Iniewski discloses the following:

a) the length of the doped region is substantially longer than the width (For Example: See Figure 1 and Figure 2).

In regards to claim 36, Iniewski discloses the following:

a) the first and second semiconductor structures are spaced apart from each other (For Example: See Figure 1 and Figure 2).

In regards to claim 37, Iniewski discloses the following:

a) the first semiconductor structure includes polysilicon (For Example: See Figure 1).

8. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iniewski et al. (U.S. Patent No. 6,104,277) in view of Huang et al. (U.S. Patent No. 5,721,166).

In regards to claim 31, Iniewski fails to disclose the following:

a) a non-conductive region lying between the first and second semiconductor structures and over the doped region.

However, Huang et al. ("Huang") discloses the use of a non-conductive region (9) lying between the first and second semiconductor structures and over the doped region (For Example: See Figure 6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Iniewski to include a non-conductive region

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lying between the first and second semiconductor structures and over the doped region the as disclosed in Huang because it aids in increasing the resistance (For Example: See Abstract).

Additionally, since Iniewski and Huang are both from the same field of endeavor, the purpose disclosed by Huang would have been recognized in the pertinent art of Iniewski.

In regards to claim 32, Iniewski discloses the following:

a) a contact structure (9) that makes an electrical connection to the first region of the doped region (For Example: See Figure 2).

In regards to claim 32, Iniewski fails to disclose the following:

a) a contact structure extending through the non-conductive region.

However, Huang discloses the use of a contact structure (11b) extending through the non-conductive region (9) (For Example: See Figure 6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Iniewski to include a contact structure extending through the non-conductive region as disclosed in Huang because it aids in increasing the resistance (For Example: See Abstract).

Additionally, since Iniewski and Huang are both from the same field of endeavor, the purpose disclosed by Huang would have been recognized in the pertinent art of Iniewski.

#### ***Allowable Subject Matter***

9. Claim 30 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular and after final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ML  
January 23, 2006



**Mary Wilczewski**  
**Primary Examiner**